Mika Juntunen, Rolf Stenberg: *An unconditionally stable mixed discontinuous Galerkin method*; Helsinki University of Technology, Institute of Mathematics, Research Reports A531 (2007).

Abstract: *For the model Poisson problem we propose a method combining the discontinuous Galerkin method with a mixed formulation. In the method independent and fully discontinuous basis functions are used both for the scalar unknown and its flux. The continuity requirement is imposed by Nitsche's technique [7]. In the implementation the flux is eliminated by local condensing. We show that the method is stable and optimally convergent for all positive values of the stability parameter. We also perform an a posteriori error analysis. The theoretical results are verified by numerical computations.*

AMS subject classifications: 65N30, 65N55

Keywords: Mixed method, discontinuous Galerkin method, stability, Nitsche's method

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